

Closed-loop Control of a Sludge Dewatering Line

Background

In 2004 the SCA Östrand mill in Sweden converted their waste water treatment system from an anaerobic to a multibio. Earlier the dewatered waste activated sludge was sent to a landfill. Today the sludge is dewatered in a new line, later mixed with thick black liquor and finally fed to the recovery furnace. The new dewatering line includes a dewatering unit and a centrifuge, bringing the dry content over 10 %.



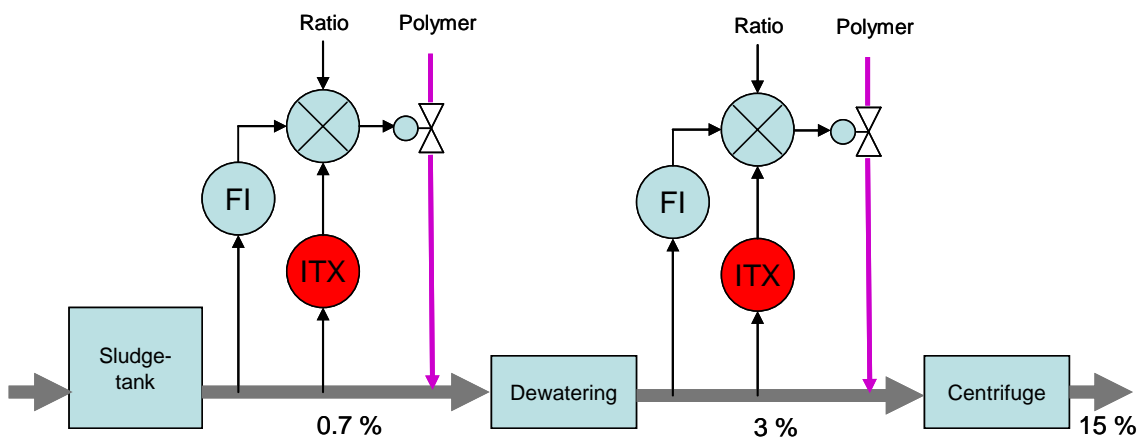
Application

For controlling the dewatering line, two inline suspended solids (SS) sensors (Cerlic ITXIL) were installed in strategic positions. Both sensors are utilized for closed-loop control of the polymer dosage before the dewatering unit and the centrifuge. The TSS value from the Cerlic sensor is multiplied with the volume flow to get the dry content flow, which then is used to calculate the optimal polymer dosage. The information from the Cerlic sensors is also used for manual control of the amount of waste activated sludge.

Results

The Cerlic sensors have contributed to a successful start-up of the dewatering line. Today the sensors are used to maintain optimal conditions for the process with optimal dosage of polymers. The initial objective of a final dry content of 10 % has been exceeded. The advantages with the Cerlic sensors are:

- Higher efficiency in the process equipment due to stable and optimal operating conditions
- Reduced consumption of polymers as excess dosage is avoided
- Fast information of operational disturbances



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